

**“All Our Tomorrows”:
A Long-Range Forecast of Global
Trends Affecting Arms Control
Technology**

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INSS Occasional Paper 44

June 2002

USAF Institute for National Security Studies
USAF Academy, Colorado

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FOREWORD

We are pleased to publish this forty-fourth volume in the *Occasional Paper* series of the United States Air Force Institute for National Security Studies (INSS). This paper reports the results of a project that takes INSS back very close to its founding vision. Two primary rationale for the establishment of a policy research institute within the military academic community were to tap into the cross-disciplinary capabilities existent within the faculties of military education institutions and to foster and leverage the ready collegial networks that exist across and beyond these institutions and their faculties and students. This project brought the combined efforts of the technical and social sciences faculties of the Air Force Academy, selected members of the faculties from the US Military Academy, the Air War College, and the Air Force School of Advanced Airpower Studies, and representatives from centers of expertise such as Sandia and Los Alamos National Laboratories, the Department of Defense, and the Department of State all together to forecast trends and project requirements for arms control in 2015. As INSS as an Institute both sponsored and completed the paper published here, we deflect further overview to the Executive Summary that follows.

About the Institute

INSS is primarily sponsored by the National Security Policy Division, Nuclear and Counterproliferation Directorate, Headquarters US Air Force (HQ USAF/XONP) and the Dean of the Faculty, USAF Academy. Our other sponsors include the Secretary of Defense's Office of Net Assessment (OSD/NA); the Defense Threat Reduction Agency; the Air Staff's Intelligence, Surveillance, and Reconnaissance Directorate (XOI) and the Air Force's 39th and 23rd Information Operations Squadrons; the Army Environmental Policy Institute; and the Air Force Long-Range Plans Directorate (XPXP). The research leading to the papers in this volume was sponsored by OSD/NA, DTRA, and XONP. The mission of the Institute is "to promote national security research for the Department of Defense within the military academic community, and to support national security education." Its research focuses on the areas of greatest interest to our organizational sponsors: arms control and strategic security; counterproliferation, force protection, and homeland security; air and space issues and planning;

information operations and information warfare; and regional and emerging national security issues.

INSS coordinates and focuses outside thinking in various disciplines and across the military services to develop new ideas for defense policy making. To that end, the Institute develops topics, selects researchers from within the military academic community, and administers sponsored research. It also hosts conferences and workshops and facilitates the dissemination of information to a wide range of private and government organizations. INSS provides valuable, cost-effective research to meet the needs of our sponsors. We appreciate your continued interest in INSS and our research products.

JAMES M. SMITH
Director

“ALL OUR TOMORROWS”: A LONG-RANGE FORECAST OF GLOBAL TRENDS AFFECTING ARMS CONTROL TECHNOLOGY

EXECUTIVE SUMMARY

This report summarizes a three-phase research project undertaken by the USAF Institute for National Security Studies on behalf of the Defense Threat Reduction Agency to forecast long-range global trends affecting arms control technologies. The report projects the international political, economic, and scientific environments to the year 2015. It posits economic and technological drivers as shaping the system, including its military and political dimensions. The result will be a two-tiered system, with great danger arising from significant proliferation in the second tier and the transition zone between tiers. The report next draws conclusions from this likely future for the scope, value, and practice of arms control. Arms control will be focused less on limitation and reduction of existing weapons, although the endgame there between the United States and Russia will remain a significant effort. The focus will shift to the less well-defined realm of counterproliferation, and to marginal, failing, and failed states as well as non-traditional and non-state actors. New dimensions will be added, including control efforts toward small arms, advanced conventional weapons, military space, and information operations. The report then extrapolates from this future to assess the likely arms control technology requirements in cooperative, non-cooperative, intrusive, and non-intrusive regimes. The projection here is continuing requirements for each of these specialized sets of technologies, with particular emphasis on multiple-use technologies for remote arms control compliance and verification monitoring as well as for intelligence detection and collection. Similarly, area arms control monitoring systems must be capable of application for force protection applications. Data management/knowledge management will become a top priority for arms control, as will the continuing development of human expertise in this advanced area of specialization.

